

REMARKS

It is respectfully requested that this application be reconsidered in view of the above amendments and the following remarks and that all of the claims remaining be allowed.

Amendments in the Specification

The specification has been amended to replace "A" and "D" in the context of formula I with "a" and "d", respectively, to avoid confusion. The specification has also been amended on pages 50 and 58 to include sequence identifiers. No new matter is introduced.

Claim Amendments

Claims 8, 28-34 and 46-54 have been canceled without prejudice or disclaimer.

Claims 1, 2 and 14 have been amended to recite *aXXdXXX* instead of AXXDXXX to avoid confusion.

Claims 1 and 14 have also been amended to recite "the peptide optionally comprises additional amino acids on either or both sides of the formula I", for which support can be found, for example, in the original claim 8. These claims have further been amended to recite "the number of said additional amino acids on either side is less than 30", for which support can be found, for example, at page 11, lines 1-4.

Claims 1 and 14 have also been amended to delete the reference to derivatives.

Claims 9 and 57 have been amended to depend from claim 1 in view of the cancellation of claim 8. Claim 57 has also been amended to recite "peptide" to correct antecedent basis.

Claim 15 has been amended to recite "The" instead of "A" to correct a typographical error.

Claims 16, 21, 22, 27, 35, 36, 42, 43 and 55 have been amended to recite the peptide of claim 1 instead of a peptide of formula I.

New claims 58-63 have been added. Support for these new claims can be found, for example, as follows:

Claim Number	Exemplary Support
58	Page 20, lines 9-10 and page 30, lines 3-6
59	Original claim 26
60	Original claims 1 and 8; Example 1
61	Page 20, lines 9-10 and page 30, lines 3-6
62	Original claim 26
63	Original claim 6

No new matter has been added by these amendments. The Examiner is hereby requested to enter these amendments.

Applicants submit that all claim amendments presented herein or previously are made solely in the interest of expediting allowance of the claims and should not be interpreted as acquiescence to any rejections or ground of unpatentability. Applicants reserve the right to file at least one continuing application to pursue any subject matter that is canceled or removed from prosecution due to the amendments.

Specification

a. The alphabetical letters of "A" and "D" in formula I stand objected to since they also represent alanine and aspartate, respectively. In response, the specification has been amended to replace "A" and "D" in formula I with *a* and *d*, respectively.

b. The sequences at page 50, line 20, and page 58, lines 10-17 stand objected to because they are not accompanied by sequence identifiers. The specification has been amended to recite "residues 4-27 of SEQ ID NO:7" and "SEQ ID NO:17" at appropriate places. The current sequence listing does not contain SEQ ID NO:17. A revised sequence listing and computer readable form will be submitted in due course.

c. The Office Action states that the ATCC culture collections at page 62, line 8, and page 63, line 16, etc. are incompletely identified in the specification. However, the specification does not intend to identify any specific culture. Instead, the procedures for bactericidal assay (page 62) and opsonization assay (page 63) are described, which can be applied to any desired bacteria, such as those procured from ATCC. Therefore, no specific ATCC number needs to be identified.

Accordingly, withdrawal of this objection is respectfully requested.

Claim Objection

The objection to claims 1, 2 and 14 for reciting the alphabetic letters "A" and "D" has been obviated, since these claims have been amended to recite "a" and "d" instead of "A" and "D", respectively. Therefore, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. §112

The rejection of claims 1, 14 and 57 under 35 U.S.C. §112, second paragraph, has been obviated for the reasons set forth below.

Claims 1 and 14 stand rejected as allegedly being indefinite for the recitation of "derivative". Since the recitation of "derivative" has been deleted from these claims, this part of the rejection is now moot.

Claim 57 stands rejected for reciting "protein". The term "protein" has been amended to "peptide", for which antecedent basis is proper.

Therefore, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. §§102 and 103

The rejection of claims 1-15, 21-26, 35-41 and 57 under 35 U.S.C. §102(b) or §103(a) in view of Briles et al. (WO97/09994) is respectfully traversed for the reasons set forth below.

35 U.S.C. §102

The standard of anticipation under 35 U.S.C. §102 is that each and every element of the claim must be found in the cited reference. *In re Marshall*, 198 USPQ 344 (CCPA 1978). Briles et al. do not teach each and every element of the rejected claims.

Claim 1, as amended, is directed to a synthetic peptide of formula I:

$(aXXdXXX)_n$ I

wherein

a is Ile, Leu, or Val;

d is Leu, Ile, or Val;

each X is an amino acid residue which corresponds to an amino acid residue of an epitope of a native coiled-coil protein;

the X residues in each $(aXXdXXX)$ repeat form a set of X residues;

n is equal to or greater than 1; and

the peptide optionally comprises additional amino acids on either or both sides of the formula I, wherein the number of said additional amino acids on either side is less than 30.

Briles et al. teach certain pneumococcal genes and gene products, fragments thereof, and their uses. Briles et al. do not teach any synthetic peptide of formula I with optionally additional amino acids on either or both sides of the formula I, wherein the number of said additional amino acids on either side is less than 30. The Office Action points out that Briles et al. disclose the Bg973c sequence (at Figure 13, Sheet 5 of Briles et al.). Residues 36-58 of the Bg973c sequence are EELSDKIDEI~~DAEIAKLEKDVED~~, which contain two $(aXXdXXX)$ repeats. However, the

Bg973c sequence contains more than 30 additional amino acids on either side of the (aXXdXXX) repeats. Therefore, Briles et al. do not teach each and every element of claim 1.

Claim 14 is similar to claim 1, also reciting that the number of said additional amino acids on either side is less than 30. Likewise, Briles et al. do not teach each and every element of claim 14. All the other rejected claims ultimately depend from claim 1 or 14, hence reciting all the elements of claim 1 or 14. As a result, Briles et al. do not teach each and every element of any of the rejected claims.

Accordingly, withdrawal of this rejection is respectfully requested.

35 U.S.C. §103

To properly issue a rejection under 35 U.S.C. §103, the USPTO bears the initial burden to establish a *prima facie* case of obviousness by meeting three criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings to arrive at the claimed invention. *In re Vaeck*, 20 USPQ 2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference or the combination of references must teach or suggest all the claim limitations. *In re Royka*, 180 USPQ 580 (CCPA 1974).

The instant rejection does not meet these criteria. Briles et al. teach large fragments of pneumococcal gene products, some of which may happen to contain (aXXdXXX) repeats as a small part of the fragments. There is no motivation or suggestion to select a particular (aXXdXXX)- containing fragment wherein *a* is Ile, Leu, or Val, and *d* is Leu, Ile, or Val. Nor is there a motivation or suggestion to modify the fragments of Briles et al. so that they contain less than 30 amino acids on both sides of the (aXXdXXX) repeats. Furthermore, Briles do not teach all the elements of claim 1, particularly the element that the flanking sequence contains less than 30 amino acids on either side of the (aXXdXXX) repeats.

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Filed : June 14, 2001
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Accordingly, the required criteria under 35 U.S.C. §103 are not met, and withdrawal of this rejection is respectfully requested.

Information Disclosure Statements

Information Disclosure Statements with Forms PTO-1449 were filed in the above-captioned patent application on September 27, 2001, and April 1, 2002. Applicants have not yet received the Examiner's copies of the Forms PTO-1449, initialed to acknowledge the fact that the Examiner has considered the cited disclosed information.

It is respectfully requested that the Examiner initial and return copies of the subject Forms PTO-1449.

Conclusions

For the reasons set forth above, Applicants submit that the claims of this application are patentable. Reconsideration and withdrawal of the Examiner's rejections are hereby requested. Allowance of the claims remaining in this application is earnestly solicited.

In the event that a telephone conversation could expedite the prosecution of this application, the Examiner is requested to call the undersigned at (650) 839-5044.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: July 19, 2004


Ping F. Hwung
Reg. No. 44,164

Fish & Richardson P.C.
500 Arguello Street, Suite 500
Redwood City, California 94063
Telephone: (650) 839-5070
Facsimile: (650) 839-5071